

first two attached independently of the hearts, to the anterior surface of septa 9/10 and 10/11, and the last two to the posterior face of septa 10/11 and 11/12). No prostates.

A pair of ovaries and ovisacs in segment 13 attached to the posterior surface of septum 12/13. No oviduct can be made out. Female opening, as made out in transverse sections, on segment 13 within seta-space *aa*.

Spermatheca not present.

The supra-oesophageal ganglion is in segment 4. The two halves of the nerve-cord remain separate, being enclosed only in a connective-tissue sheath.

Type in the British Museum.

Syntypes in the Hamburg and Indian Museums.

Locality.—Margins of pools in the forests of Dubari, Fraserpett (Coorg); river-beds of the Cauvery, Dubari (Coorg).

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IV.—*An Account of the Castniinæ in the Collection of Madame Gaston Fournier [Lepidoptera].* By PERCY I. LATHY, F.E.S.

[Plate IV.]

SINCE the appearance of M. Houlbert's fine work on the Castniinæ (Etud. Lépid. Comp. xv. 1918) the attention of Lepidopterists has naturally been turned towards this interesting family. Mr. Talbot, in his review of this work (Novitat. Zool. xxvi. pp. 28-35, 1919), and Lord Rothschild (*loc. cit.* pp. 1-27) have already added considerably to our

knowledge by describing several new species and subspecies, and also by correcting a certain number of errors that were bound to be found in a work of such magnitude as that of M. Houlbert.

As Madame Fournier's collection of Castniinæ now ranks among one of the finest of this family, it has occurred to me that an account of the species it contains may be of interest to Lepidopterists, especially as in it I have discovered a new species and several new subspecies, and also am able to point out variation that exists in some species, that have hitherto been exceedingly rare in collections, of which Madame Fournier has long series.

I have given a complete list of the specimens contained in the collection, so that any Lepidopterist desiring to visit it in order to study this family may know at once what material he will have to work upon, and at the same time it will serve to show the numerous gaps that still remain to be filled.

A curious feature that I have noticed among some species of the Castniinæ is the resemblance of males to females, and *vice versâ*—I allude, of course, to the non-dimorphic species, such as *Ypanema decussata*, *Xanthocastnia evalthe*, etc. Usually the females in these species have the apex of fore wing slightly more rounded than in the males; but it often happens that this character is not constant, and one has only to arrange a series according to it, and after to carefully examine the frenulum, and it will then be found that in most cases the sexes have been mixed.

The variation in size of individual specimens of the same species is also very remarkable, and I give measurements of fore wing of a few of the most striking cases that I have before me:—

| | ♂. | ♀. |
|-------------------------------------|-------|-------|
| | mm. | mm. |
| <i>Xanthocastnia evalthe</i> | 30-39 | 30-48 |
| <i>Erythrocastnia syphax</i> | 37-52 | 37-53 |
| <i>Ceretes marcel-serresi</i> | 20-36 | .. |
| <i>Sympalamides mimon</i> | 25-35 | 30-42 |
| <i>Ypanema decussata</i> | 26-40 | 31-44 |
| <i>Aciloa palatinus</i> | 30-41 | 29-43 |
| <i>Haemonides cronida</i> | 32-44 | 41-52 |

I have arranged the collection before me after Houlbert, and have followed his classification throughout this paper; but I think that a further study of this family will lead to the sinking of many new generic names used by him.

Cyparissias dedalus, Cram.*Papilio dedalus*, Cram. Pap. Exot. i. p. 1, figs. A, B (1775).

This species appears to be much rarer in French Guiana than *C. guyanensis*, Houlb.

3 ♀ ♀, Lower Maroni, French Guiana.

Cyparissias dedalus parvënsis, subsp. n.

This form may easily be distinguished from the typical *dedalus* by the larger and more lunulate submarginal spots of the hind wing; these spots have the tendency to be produced along the nervules by yellowish sealing, and give the impression of an incomplete oval marking; the pale markings are also more yellowish than in *dedalus*.

7 ♂ ♂, 6 ♀ ♀, Para, Amazons.

Cyparissias dedalus conspicua, Rothsch.

Castnia (*Cyparissias*) *dedalus conspicua*, Roths. Novit. Zool. xxvi. p. 2 (1919).

1 ♂, Buenavista, E. Bolivia.

Cyparissias guyanensis, Houlb.

Castnia guyanensis, Houlb. Etudes Lép. Comp. xiii. p. 50, pl. i. fig. 1 (1917).

Considerable confusion has arisen over this species, described by Houlbert (*loc. cit.*). In his "Revision of the Castniinae" (*Études Lép. Comp.* xv. p. 92) he treats *dedalus*, Cram., as an insect unknown in collections. Jordan (*in Novit. Zool.* xxiv. p. 59, 1917) described a species under the name of *grandis*, and pointed out that the chief difference (apart from the structure of the genitalia) is in the absence of white spots above first radian nervule of fore wing and in fore wing not having a hairy underside.

Talbot, in his review of Houlbert's work (*Novit. Zool.* xxvi. pp. 28-35), makes no mention of any species of the *Cyparissias*-group.

Rothschild, in his Supplementary Notes (*loc. cit.* pp. 1-27), places *guyanensis*, Houlb., as a synonym of *dedalus*, Cram.

When I arranged the Castniidæ in Madame Fournier's collection I had at first followed Rothschild's view, but on going carefully through it a second time, and comparing the specimens determined as *grandis*, Jord., with the figure of *guyanensis*, Houlb., I felt almost certain that I had to deal with the same species.

Fortunately, Mr. Talbot was passing through Paris on his way to visit M. Charles Oberthür at Rennes, and I asked him to be kind enough to examine Houlbert's type; and he did so, and found, as I expected, that it is the species without the hairy underside of fore wing. I also examined the specimens in the Paris Museum that were sent to Houlbert, and found them all to be the non-hairy species.

As Dr. Jordan's description appeared in May 1917, and that of Houlbert in March of the same year, it is the latter who has priority, and *grandis*, Jordan, sinks as a synonym.

The pale spots of double row of hind wing in this species are very variable in size; in one specimen from French Guiana the outer row is almost obsolete; other specimens have the spots of the inner row smaller than those of the outer, while others have them of similar size in each row. The two specimens from Para are not to be distinguished from those from Guiana.

10 ♂♂, 4 ♀♀, Lower Maroni, French Guiana; 1 ♂, 1 ♀, Para, Amazons.

Cyparissias boliviensis, Houlb.

Castnia boliviensis, Houlb. Etud. Léop. Comp. xiii. p. 52 (1917).

Lord Rothschild states (Novit. Zool. xxvi. p. 3, 1919) that the nine males at Tring agree exactly with Preiss's figure; one of the specimens in Madame Fournier's collection differs in having the oblique white band of fore wing extended to vein 1.

2 ♂♂, Rio Inambare, S.E. Peru.

Cyparissias preissi, Stgr.

Castnia preissi, Stgr. Soc. Ent. 1899, t. xiv. p. 21.

This appears to be an exceedingly rare species. The type is from Iquitos, Upper Amazons. The two specimens in Madame Fournier's collection differ from Preiss's figure of the type ['Neue und seltene Arten des Lepidopteren-Genus *Castnia*,' Taf. i. fig. 4 (1899)], inasmuch as the oblique white band of fore wing is not continued as far as margin.

2 ♂♂, Lower Maroni, French Guiana.

Amauta angustata, Druce.

Castnia angustata, Druce, Ann. & Mag. Nat. Hist. (7) xx. p. 505 (1907).

Houlbert, in his work on the Castniinæ (Etud. Léop. Comp. p. 125), does not state whether there is any difference between

the markings of the male and female. The two specimens I have before me differ, inasmuch as the male has the cellular spot of fore wing very indistinct, the discal band and submarginal spots of hind wing less pronounced.

1 ♂, Canelos, Ecuador; 1 ♀, Balsapamba, Ecuador.

Amauta cacica, Herr.-Schäff.

Castnia cacica, H.-S. Ausseur. Schmett. pl. liv. fig. 143 (1854).

1 ♀, Bogota, Colombia.

Amauta cacica procera, Boisd.

Castnia procera, Boisd. Spec. Gén. Lépid. Hétt. p. 503 (1874).

3 ♂ ♂, 2 ♀ ♀, without locality; 1 ♀, Chiriqui.

Amauta papilionaris velutina, Houlb.

Castnia velutina, Houlb. Etud. Lépid. Comp. fasc. xiii. p. 55 (1917).

7 ♂ ♂, 9 ♀ ♀, Macas, Ecuador.

Amauta papilionaris affinis, Rothsch.

Castnia (Amauta) papilionaris affinis, Roths. Novit. Zool. xxvi. p. 3 (1919).

1 ♂, Chanchamayo, Peru; 1 ♀, La Merced, Peru.

Corybantes pylades, Stoll.

Papilio pylades, Stoll, in Cramer, Pap. Exot. vol. iv. p. 200, pl. cccclxxxvii. figs. A, B (1782).

This species appears to be fairly constant, the principal variation being in the size of the black spots of submarginal orange band of hind wing.

8 ♂ ♂, 6 ♀ ♀, Lower Maroni, French Guiana; 2 ♂ ♂, 1 ♀, Para, Amazons.

Corybantes mathani, Oberth.

Castnia mathani, Oberth. Etud. Entom. fasc. vi. pl. iv. fig. 2 (1881).

1 ♀, Lower Maroni, French Guiana.

Castniomera atymnius, Dalm.

Castnia atymnius, Dalm. Prodr. Monogr. *Castniæ* in Act. Holm. p. 12 (1824).

2 ♀ ♀, Sao Paulo, Brazil.

Castniomera atymnius humboldti, Boisd.*Castnia humboldti*, Boisd. Spec. Gén. Lépid. Héct. p. 528 (1874).

1 ♂, Muzo, Colombia.

Castniomera atymnius futilis, Walk.*Castnia futilis*, Walk. Cat. Lepid. Ins. Brit. Mus. vol. vii. p. 1581 (1856).

1 ♀, Honduras; 1 ♂, Cartago, Costa Rica.

Castniomera atymnius ecuadorensis, Houlb.*Castnia ecuadorensis*, Houlb. Etud. Lépid. Comp. fasc. xiii. p. 57 (1917).

1 ♂, Zarayaquillio, Ecuador; 1 ♂, 1 ♀, Paramba, Ecuador; 2 ♂♂, without locality.

Castniomera drucei, Schaus.*Castnia drucei*, Schaus, Ann. & Mag. Nat. Hist. (8) vii. p. 191 (1911).

2 ♂♂, Costa Rica; 1 ♂, Chiriqui; 1 ♂, C. America.

Castnia licoïdes, Boisd.*Castnia licoïdes*, Boisd. Spec. Gén. Lépid. Héct. p. 527, pl. i. (1874).

7 ♂♂, Para, Amazons; 5 ♂♂, Santarem, Amazons.

Guiana race.

Among the series is a most remarkable aberration, which is entirely without the marginal orange spots of hind wing, thus giving it a strong resemblance to *Castniomera atymnius*. I propose the name *immaculata* for this form.

21 ♂♂, 10 ♀♀, Lower Maroni, French Guiana.

Castnia licoïdes insularis, Houlb.*Castnia licoïdes*, form *insularis*, Houlb. Etud. Lépid. Comp. fasc. xv. p. 235 (1918).

1 ♂, St. Ann's, Trinidad.

Castnia licoïdes peruviana, subsp. n.

I give this name to the subspecies from Peru, which has already been described and figured by Houlbert [Etud. Lépid. Comp. fasc. xv. p. 235, pl. U. fig. 77 (1918)].

This race can quite easily be distinguished by its large size and the greater extent of white on the hind wings.

11 ♂♂, Rio Tono, C. Peru; 6 ♂♂, La Merced, C. Peru.

Ecuador race.

This race seems to be very variable as regards the size and number of marginal orange spots of hind wing. I have not sufficient material before me to venture to give it a name.

4 ♂♂, 1 ♀, Zarayaquillo, Ecuador; 1 ♂, Paramba, Ecuador.

Castnia licoides, ab. *licoidella*, Strand.

Castnia licis licoidella, Strand, in Seitz, *Macrolep. Erde*, vol. vi. p. 8, pl. ii. b (1913).

I am quite of the opinion of Lord Rothschild [Novitat. Zool. xxvi. p. 9 (1919)] that *licoidella*, Strand, is nothing more than an aberration of *licoides*, Boisd., and is to be found among all the races of that species. Houlbert only knew of specimens of *licoidella* from Peru, and as he had a long series—twenty specimens—before him, it is not surprising that he took it to be a distinct species. I am, however, able to add several new localities for this form, and I think if all Lepidopterists who possess it would carefully examine the localities of their specimens that other localities would probably be added to its already known habitat.

6 ♂♂, Lower Maroni, French Guiana; 1 ♂, St. Ann's, Trinidad; 1 ♂, Villavicencia, Colombia; 2 ♂♂, Ecuador; 1 ♂, Canelos, Ecuador.

Castnia albomaculata, Houlb.

Castnia albomaculata, Houlb. *Etud. Lépid. Comp.* fasc. xiii. p. 59, pl. iv. (1917).

3 ♂♂, La Merced, C. Peru; 1 ♂, Rio Tono, C. Peru.

Castnia albomaculata talboti, subsp. n.

Differs from typical form in having white band of fore wing somewhat narrower and in the subapical white spots not being so sharply defined; the white band of hind wing more continuous and less broken near costa than in the Peruvian form.

2 ♂♂, Zarayaquilla, Ecuador.

Erythrocastnia syphax, Fabr.*Papilio syphax*, Fabr. Syst. Entom. p. 480. no. 165 (1775).

In the long series from French Guiana there appears to be but little variation, most of them having the black patch in the red border of hind wing at anal angle well marked; but one specimen is without it, and therefore agrees with the Amazonian race. There are two specimens of a curious aberration which has the oblique white band of fore wing interrupted at veins 2 and 3; for this aberration I propose the name of *interrupta*.

26 ♂♂, 6 ♀♀, Lower Maroni, French Guiana; 1 ♂, Brazil? This locality is probably erroneous; the specimen was received from a German dealer bearing the ticket "*Castnia syphax*, var. ♀, Brasil." It is a male, and has the anal black patch in red border of hind wing well defined.

Erythrocastnia syphax completa, subsp. n.

This subspecies differs from the typical Guiana form in wanting the anal black patch in red border of hind wing. As already noticed, it occurs as an aberration in Guiana, but in the Amazon district it is the typical form. One of the specimens from Santarem resembles the aberration *interrupta* described above, inasmuch as it has the oblique white band of fore wing interrupted at vein 2.

2 ♂♂ (type), Santarem, Amazons; 2 ♂♂, Para, Amazons.

Xanthocastnia evalthe, Fabr.*Papilio evalthe*, Fabr. Syst. Entom. p. 480. no. 166 (1775).

I think that allowance should always be made for the roughness of Cramer's figures. Lord Rothschild has already pointed out [Novitat. Zool. xxvi. p. 1 (1919)] that, though the originals in the British Museum are very well drawn, that the reproductions are often very coarsely executed; I therefore adopt the name of *evalthe*, Fabr., for the form from French Guiana, and consider the name of *evaltheiformis*, Houlb., to be merely a synonym.

8 ♂♂, 13 ♀♀, Lower Maroni, French Guiana; 1 ♀, no locality.

Xanthocastnia evalthe quadrata, Rothsch.*Castnia* (*Xanthocastnia*) *evalthe quadrata*, Rothsch. Novitat. Zool. xxvi. p. 10 (1919).

One specimen from Ecuador wants the characteristic cellular yellow spot on underside of hind wing.

One female is remarkable in having the black of hind wing shot with steel-blue.

2 ♂♂, Zarayaquillio, Ecuador; 1 ♂, 3 ♀♀, Chanchamayo, C. Peru; 1 ♀, San Luis, C. Peru; 1 ♀, Rio Tono, C. Peru; 1 ♂, 1 ♀, La Merced, C. Peru.

Xanthocastnia evalthe evalthonida, Houlb.

Castnia evalthonida, Houlb. Etud. Lépid. Comp. fasc. xiii. pl. iv. fig. 5 (1917).

1 ♀, Colombia.

Xanthocastnia evalthe cuyabensis, subsp. n.

Fore wing of male not differing from that of the typical form. Hind wing with the three anterior spots of the discal band larger than in typical *evalthe*; on the underside the spot in cellule 5 is smaller than the others. In one male the outer band of the fore wing extends to just below vein 4, and in the other it nearly touches vein 3; the red spots and red anal patch are variable in this species. The principal difference between the female of this form and the type is in the slightly wider subapical band of fore wing and in the discal band being equally wide at anal angle as on costa.

1 ♀, River System, Cuyaba Corumba, Matto Grosso.

I am indebted to Mr. G. Talbot for the description of the male of this new form, the type of which is in the collection of Mr. Joicey, together with another specimen, the two being from the same locality as the female in Madame Fournier's collection.

Graya dalmanii, Gray.

Castnia dalmanii, Gray, Trans. Ent. Lond. 1837, p. 145.

One specimen has the black spots in marginal red border of hind wing well separated.

4 ♂♂, Rio de Janeiro, Brazil.

Athis hegemon, Koll.

Castnia hegemon, Koll. Ann. Wien. Mus. vol. i. p. 217, pl. xiii. fig. 2 (1839).

8 ♂♂, 3 ♀♀, Rio de Janeiro, Brazil.

Athis fons-colombei, Godt.

Castnia fons-colombei, Godt. Enc. Méth. vol. ix. p. 799. no. 13 (1824).

This species shows considerable variation in the apical

black markings of hind wing above; some specimens have the double series, marginal and submarginal, well developed; others have the submarginal series wanting, and, again, others lack the marginal series. At present I have not seen an example which entirely wants both series, but one specimen in Madame Fournier's collection has the submarginal spots barely indicated by reddish scales, and the marginal spots are but very slightly developed, being represented only by black scaling on the nervules.

21 ♂♂, 4 ♀♀, Rio de Janeiro, Brazil; 1 ♂, no locality.

Athis fabricii boisduvalii, Walk.

Castnia boisduvalii, Walk. List Lepid. Ins. Brit. Mus. pt. i. p. 27 (1854).

5 ♂♂, 2 ♀♀, Brazil.

Athis fabricii papagaya, Westw.

Castnia papagaya, Westw. Trans. Linn. Soc. Lond. 1877, p. 170, pl. xxx. fig. 6.

2 ♂♂, 6 ♀♀, Brazil.

Athis fournieri, sp. n. (Pl. IV. fig. 1.)

♂. Upperside: fore wing dark chocolate-brown, the discal area bearing the characteristic horseshoe-shaped mark of this group, this mark being reddish orange in colour; marginal area slightly paler and suffused with reddish-orange scales; three subapical transparent spots, of which the upper is the smallest and the centre the largest. Hind wing reddish orange, basal third black except costal area; discal wide pale yellow band from inner margin, shading off into the reddish-orange ground-colour just beyond vein 6; submarginal wide black band from inner angle to near vein 8; a black spot beyond at apex; veins between this black band and margin widely bordered with black.

Underside: fore wing orange-brown, apex chocolate-brown, inner margin shining greyish; a chocolate-brown costal patch at end of cell, lower part of this patch black; a submarginal black bar from vein 1 to vein 4; transparent spots as above. Hind wing cream-colour, suffused with reddish brown on costal area; a reddish-brown band from costa to end of cell; a wide, marginal, reddish-brown band, of which the upper half is suffused with cream, and a series of submarginal pale creamy-red spots, diminishing in size towards anal angle.

Basal part of abdomen black, the rest pale yellow ringed with black; anal tuft orange-brown.

1 ♂, Ecuador.

This species seems to be nearest to *A. herrichii*, Boisd., but may easily be distinguished by the orange hind wing, which bears a most remarkable resemblance to that of *Acihoa palatinus ferruginosa*, Lathy.

Athis orestis, Walk.

Castnia orestes, Walk. List Lepid. Ins. Brit. Mus. pt. i. p. 26 (1854).

3 ♂ ♂, Rio de Janeiro, Brazil; 1 ♂, Brazil.

Paysandisia josepha, Oberth.

Castnia josepha, Oberth. Etud. Lépid. Comp. 1913, vol. ix. 1, p. 63, pl. cclvii. fig. 2164 ♂, 2165 ♀.

1 ♀, Paysandu, Uruguay.

Elina icarus, Cram.

Papilio icarus, Cram. Pap. Exot. i. p. 26, pl. xviii. figs. A, B (1775).

In the long series from Guiana before me I find several specimens that have discal and submarginal white spots in apical area of hind wings above.

20 ♂ ♂, 7 ♀ ♀, Lower Maroni, French Guiana.

Elina icarus penelope, Schauf.

Castnia penelope, Schauf, Nunquam Otiosus, p. 9, pl. i. (1870).

1 ♂, Santarem, Amazons.

Elina icarus endelechia, Druce.

Castnia endelechia, Druce, P. Z. S. 1893, p. 280.

2 ♂ ♂, Sapucay, Paraguay.

Elina eudesmia, Gray.

Castnia eudesmia, Gray, Trans. Ent. Soc. Lond. 1838, p. 145.

1 ♂, Valparaiso, Chili; 1 ♀, Central Chili.

Ceretes marcel-serresi, Godt.

Castnia marcel-serres, Godt. Enc. Méth. ix. p. 800 (1824).

1 ♂, 4 ♀ ♀, Rio de Janeiro, Brazil; 1 ♂, Santa Catharina, Brazil; 1 ♂, no locality.

Ceretes thais, Drury.

Papilio thais, Drury, Ill. Nat. Hist. iii. p. 20, pl. xvi. fig. 4 (1782).

I quite agree with Lord Rothschild and Mr. Talbot that *gracillima*, Houlb., is nothing but a slight aberration of *thais*, Drury, and not a local race. Madame Fournier has seven females from Rio de Janeiro, and therefore, according to Houlbert, these should be *gracillima*; but only two out of these seven can possibly be referred to this form—the others are *thais*, Drury.

2 ♂♂, 7 ♀♀, Rio de Janeiro, Brazil; 1 ♂, 1 ♀, Brazil; 1 ♂, no locality.

Sympalamides phalaris mygdon, Dalm.

Castnia mygdon, Dalm. Vet. Handb. Act. Holm. 1824, p. 403. no. 13, pl. i. fig. 2.

1 ♂, no locality.

Sympalamides phalaris mimon, Hübn.

Sympalamides mimon, Hübn. Samml. Exot. Schmett. vol. ii. pl. cxlii. figs. 1, 2 (1822-24).

Very variable as to colour, some specimens being much paler than others; the spots of the hind wing vary from white to buffish.

17 ♂♂, 3 ♀♀, Rio de Janeiro, Brazil; 2 ♂♂, Sao Paulo, Brazil; 3 ♂♂, 1 ♀, no locality.

Sympalamides phalaris sora, Druce.

Castnia sora, Druce, Ann. & Mag. Nat. Hist. (6) xvii. p. 217 (1896).

1 ♂, Sapucay, Paraguay.

Ypanema hübnéri, Boisd.

Castnia hübnéri, Boisd. in Latr. in Cuv. Règne Anim. vol. iii. p. 439, pl. xx. fig. 2 (1830).

1 ♂, Nivac, Matto Grosso; 1 ♂, Brazil; 1 ♂, 1 ♀, no locality.

Ypanema godartii, Mén.

Castnia godartii, Mén. Descr. Nouv. Esp. Lepid. Mus. Petr. pt. iii. p. 130. no. 1462, pl. xi. fig. 4 (1863).

1 ♀, Theresopolis, Brazil.

Ypanema decussata, Godt.

Castnia decussata, Godt. Enc. Méth. vol. ix. p. 799 (1824).

7 ♂♂, 4 ♀♀, Rio de Janeiro, Brazil; 2 ♂, Rio Grande do Sul, Brazil; 1 ♂, Brazil; 2 ♂♂, no locality.

Schaefferia amycus, Cram.

Papilio amycus, Cram. Pap. Exot. vol. iii. p. 60, pl. cexxvii. figs. D, E (1779).

1 ♂, Lower Maroni, French Guiana.

Schaefferia amycus alboinsignita, Strand.

Castnia amycus, form *alboinsignita*, Strand, in Seitz. Grossschmett. Erde, vol. vi. p. 13, pl. v. d (1913).

2 ♂♂, no locality.

Acilota inca, Walk.

Castnia inca, Walk. List Lepid. Ins. Brit. Mus. pt. i. p. 24. no. 22.

1 ♂, Honduras.

Acilota inca orizabensis, Strand.

Castnia clitarcha, form *orizabensis*, Strand, in Seitz. Grossschmett. Erde, vol. vi. p. 11, pl. viii. e (1918).

2 ♂♂, Vera Cruz, Mexico.

Acilota palatinus, Cram.

Papilio palatinus, Cram. Pap. Exot. vol. ii. p. 98, pl. clix. figs. B, C (1777).

M. Houlbert divides this genus into two sections, which he distinguishes only by the subapical transparent spots of fore wing, one section having but one of these spots and the other two. In the former section he places *A. palatinus*, but at the same time (p. 457) he states that this species occasionally has the second spot. The submarginal pale spots in black border of hind wing vary considerably in size.

48 ♂♂, 12 ♀♀, Lower Maroni, French Guiana.

Acilota palatinus pallida, subsp. n.

This race differs from typical *palatinus* in being paler and in the median band of hind wing being white instead of yellow.

2 ♂♂, St. Ann's, Trinidad.

Acilota palatinus ferruginosa, subsp. n.

Differs from typical *palatinus* and the race *palatinoides* in having the ground-colour of fore wings above much redder; the submarginal reddish-brown spots of hind wing are triangular and touch at their bases: the ground-colour of the fore wing below is uniform dull orange, without the brown apical area of the other forms. In *palatinus* and its known races the costal black patch contains an orange patch at its lower end; in the new race the costal patch is entirely black and there are two black spots between veins 2 and 3, of which the upper is the larger. Hind wing below similar to that of *palatinus*, but more reddish in tint, the submarginal band black.

1 ♀, Chanchamayo, Peru.

Acilota superba orientalis, subsp. n.

This race differs from the figure given by Strand in Seitz, Grossschmett. Erde, vol. vi. p. 11, pl. v. a (1913), in having the fore wing considerably darker. Strand's figure shows a discal area pale yellow; in the new race this area is dark plumbeous grey and corresponds to the colour of the sub-basal area of Strand's figure. The subapical spots are not of equal size, the lower being twice that of the upper; the yellow band of hind wing is narrower and the marginal spots smaller and well separated. Strand does not figure the underside, and his description (*loc. cit.* p. 12) is very short; I therefore give a detailed description of the new race:—

Fore wing: basal third orange-brown; a large costal black patch at end of cell, subbasal black patch on vein 2; median band yellow, becoming orange towards costa, apical area dark brown, subapical pale spots as above; a submarginal black band, commencing on inner margin and extending or gradually narrowing to a point to vein 6; this band inwardly edged with narrow orange band and outwardly with orange patches.

Hind wing yellowish white, with wide, marginal, reddish-brown border; submarginal spots as above, but more yellow; black patch at anal angle; obscure reddish-brown patch on discal area extending from costa to cell.

1 ♀, Lower Maroni, French Guiana.

Imara pallasia, Esch.

Castnia pallasia, Esch. Kotzeb. Reise, vol. iii. p. 27, pl. vi. fig. 27 (1821).

This species is very variable as to white band, and also as
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to red spotting, of hind wing, and I feel sure that with a long series one would find all forms of passage from typical *pallasia* to a form almost without red, and from the wide-banded variety to the extreme form *umbratula*, which has black hind wings.

1 ♂, 1 ♀, no locality; 1 ♂, Santa Catharina: these are typical *pallasia*. 12 ♂♂, 2 ♀♀, Rio de Janeiro, Brazil: form *lativitta*, Strand. 1 ♀, Sao Paulo, Brazil: form *nigrescens*, H. ulb. 2 ♂♂, 1 ♀, without locality: form *umbratula*, Strand.

Imara satrapes, Koll.

Castnia satrapes, Koll. Ann. Wien. Mus. i. p. 216, pl. xii. fig. 3 (1839).

The specimen in the collection before me agrees almost exactly with Westwood's figure [Trans. Linn. Soc. Lond. ser. ii., Zool. vol. i. tab. xxxi. fig. 4 (1875)]; the subapical spots of fore wing are wanting and the submarginal spots in the black border of hind wing are more reddish brown than in those of the figure. I cannot guarantee the exactitude of locality, as the specimen was purchased, and not received direct.

1 ♀, Rio de Janeiro, Brazil.

Imara satrapes catharina, Preiss.

Castnia satrapes, var. *catharina*, Preiss, Neue & Sett., Art. Cast. p. 7, pl. i. fig. 1, pl. iv. fig. 3 (1899).

1 ♂, Rio Grande do Sul, Brazil.

Prometheus cochrus, Fabr.

Papilio cochrus, Fabr. Mant. Ins. pt. ii. p. 25. no. 263 (1787).

The specimen from Sao Paulo differs from those from Rio in having the white markings of hind wing of more equal size, thus giving the impression of a white band rather than a white patch; the abdominal red patches are also much smaller, and in this respect resemble those of *garbei*, Foett.

4 ♂♂, Rio de Janeiro, Brazil; 1 ♂, Sao Paulo, Brazil.

Prometheus garbei, Foett.

Castnia garbei, Foett. Rev. Mus. Paul. vol. v. p. 639, pl. xvi. fig. 6 (1902).

5 ♂♂, 5 ♀♀, Rio Grande do Sul, Brazil.

Orthia therapon, Koll.

Castnia therapon, Koll. Ann. Wien. Mus. vol. i. p. 218, pl. xiii. fig. 3 (1839).

The principal variation of this species appears to be in the yellowish spotting of the marginal black border of hind wings. Houlbert rightly remarks [Etud. Léop. Comp. xv. p. 505 (1918)] that this character is individual and not sexual; Madame Fournier's series of males varies from a specimen with but a faint indication of a yellowish spot at anal angle to another which has a series of seven spots.

11 ♂♂, 2 ♀♀, Rio de Janeiro, Brazil.

Cyanostola diva chiriquensis, Strand.

Castnia diva chiriquensis, Strand, in Seitz. Grossschmett. Erde, vol. vi. p. 13 (1913).

2 ♀♀, Chiriqui.

Cyanostola diva tricolor, Feld.

Castnia tricolor, Feld. Reise 'Novara,' Lépid. iv. pl. lxxix. fig. 3 (1874).

1 ♀, Bogota, Colombia.

Haemonides cronis, Cram.

Papilio cronis, Cram. Pap. Exot. vol. ii. p. 125, pl. clxxviii. fig. A (1777).

This species appears to be exceedingly rare, and, with the scanty material to work upon, it is very difficult to say whether there are several races or not. Houlbert had apparently no specimen for examination, and was only acquainted with the various figures. I am inclined to think that Cramer's figure, without black band on hind wing below, represents an extreme aberration, and that Strand's figure in Seitz. Grossschmett. Erde, vol. vi. pl. vi. c (1913), represents the other extreme with heavy black band on hind wing below. The two females before me are intermediate between these two, and one of these has the band slightly more accentuated than the other. Therefore I think this character is of no specific value whatever, and of doubtful subspecific value; one of the females has the nervular white rays of fore wing well marked, as in Cramer's figure.

The males have the underside of hind wing entirely without dark band; the two specimens differ slightly, inasmuch as one of them somewhat resembles the female in

having the black margin of hind wing feebly dentated at the nervules, in the other this dentation is only noticeable at apex.

2 ♂♂, 2 ♀♀, Lower Maroni, French Guiana.

Haemonides cronida, Herr.-Schäff.

Castnia cronida, Herr.-Schäff. Samml. Auss. Schmett. p. 56, pl. lvii. fig. 142 (1850-69).

Variable as to number of yellowish-white spots in marginal black border of hind wing. In one specimen these are almost absent, in another seven well-marked spots are visible, all intermediate forms being represented. This remark applies only to the males; all the females before me have at least six well-defined spots.

30 ♂♂, 13 ♀♀, Lower Maroni, French Guiana.

Herrichia acraeoides, Gray.

Castnia acraeoides, G. R. Gray, in Griffith, Anim. Kingd. v. pl. liii. fig. 4 (1832).

1 ♀, Rio de Janeiro, Brazil.

Tephrostola gramivora, Schaus.

Castnia gramivora, Schaus, Journ. New York Entom. Soc. vol. iv. no. 4, p. 147 (1896).

1 ♀, Castro, Parana.

Cabirus linus, Cram. (Pl. IV. fig. 2.)

Papilio linus, Cram. Pap. Exot. vol. iii. p. 111, pl. cclvii. fig. A (1779).

12 ♂♂, 9 ♀♀, Lower Maroni, French Guiana.

Cabirus linus obidonus, Rothsch.

Castnia (Cabirus) linus obidonus, Rothsch. Nov. Zool. xxvi. p. 24 (1919).

1 ♂, Obidos, Amazons.

Cabirus linus peruviana, Strand.

Castnia linus peruviana, Strand, in Seitz. Grossschmett. Erde, vol. vi. p. 14 (1913).

1 ♀, Chanchamayo, Peru.

Cabirus linus dodona, Druce.*Castnia dodona*, Druce, Ann. & Mag. Nat. Hist. (6) xvii. p. 218 (1896).

1 ♂, Ecuador.

Cabirus linus micha, Druce.*Castnia micha*, Druce, Ann. & Mag. Nat. Hist. (6) xvii. p. 217 (1896).

1 ♂, 1 ♀, Sapucay, Paraguay.

Cabirus linus heliconoides, H.-S.*Castnia heliconoides*, H.-S. Samml. ausseur. Schmett. p. 53, pl. xxviii. fig. 15 (1853).

3 ♂♂, 2 ♀♀, Rio de Janeiro, Brazil; 1 ♀, Brazil.

Cabirus omissus, Rothsch. (Pl. IV. fig. 3.)*Castnia (Cabirus) linus omissus*, Rothsch. Nov. Zool. xxvi. p. 24 (1919).

When Lord Rothschild described this as a subspecies of *C. linus*, Cram., he had before him but three specimens of *C. linus*—two from Dutch Guiana and one without locality,—while all his *omissus* were from French and British Guiana. Madame Fournier has, however, a series of *C. linus* from French Guiana, taken at the same time and place as the long series of *C. omissus*; therefore there can be no question of *omissus* being a local race of *linus*.

Dr. Jordan, who has been kind enough to examine the types in the Tiing Museum for me, suggests that the difference between *linus* and *omissus* may be dimorphic, and his examination of the genitalia resulted in finding no difference between them except in the size of the penis-sheath, which he states may be due to contraction; two *omissus* and one *linus* were examined.

For the present I have regarded *omissus* as a species; it would be interesting if Lepidopterists who possess long series of the southern and western races of *C. linus* would carefully examine them, in order to find if the *omissus* form occurs in all localities with it; up to the present I only find *omissus* in Guiana and the Lower Amazon.

Apart from the distinguishing characters given by Rothschild, the nervules of the hind wing of *linus* are clothed with black scales—in *omissus* this is not so. Also in *linus* veins 4 and 5 of hind wing are well separated where emitted from cell, and in *omissus* they are close together.

27 ♂♂, 7 ♀♀, Lower Maroni, French Guiana; 1 ♂, Brazil?

Cabirus omissus fassli, subsp. n.

May be separated from typical race by the much larger subapical hyaline patch of fore wing and larger submarginal hyaline spots of hind wing.

1 ♂, Tapajos, Amazonas (type); 1 ♂, Obidos, Amazonas.

Boisduvalia melanolimbata, Strand.

Castnia melanolimbata, Strand, in Seitz, Grossschmett. Erde, vi. p. 15, pl. viii. e (1913).

This species is exceedingly variable, as might be expected in a *Castnia* mimicking a *Melinaea*. In the series before me I find males as pale as the female figured by Houlbert (Etnol. Léop. Comp. fasc. xv. pl. cclix. fig. 3841) and one female as dark as the male figured on same plate (fig. 3840); one male has submarginal row of pale yellow spots, and others have but one or two, while the majority want them entirely. The amount of black on hind wing is also very variable, some specimens having nearly all the wing black, and from these are all variations to a specimen which has but a slight suffusion of black scales.

21 ♂♂, 1 ♀, Rio Tono, C. Peru; 6 ♂♂, 2 ♀♀, La Merced, C. Peru; 2 ♂♂, 1 ♀, Chanchamayo, C. Peru; 2 ♂♂, Utcuyacu, C. Peru.

Boisduvalia tarapotensis, Preiss.

Castnia tarapotensis, Preiss, Neue & Selt., Art. *Castnia*, p. 10, pl. vi. fig. 5, pl. vii. fig. 11 (1899).

1 ♀, Upper Amazons.

Gazera zagraea, Feld.

Castnia zagraea, Feld. Reise 'Novara,' Lépid. iv. pl. lxxix. fig. 2 (1875).

2 ♀♀, Chiriqui.

Gazera hahneli canclorina, Strand.

Castnia canclorina, Strand, Lepidoptera Niepeltiana, 1914, p. 24, Taf. x. fig. 3.

1 ♀, no locality.

Nasca pelasgus, Cram.

Papilio pelasgus, Cram. Pap. Exot. iii. p. 16, pl. ccii. fig. D (1779).

2 ♀♀, Lower Maroni, French Guiana.